

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of the Claims:

1-116. (Cancelled)

117. (Currently amended) A composite material comprising:

- (a) a matrix; and
- (b) a single-wall carbon nanotube material embedded within said matrix.

118. (Original) The composite material of claim 117, wherein said matrix comprises a polymer.

119. (Original) The composite material of claim 118, wherein said polymer comprises a thermosetting polymer.

120. (Previously presented) The composite material of claim 119, wherein said thermosetting polymer comprises a polymeric material selected from the group consisting of phthalic/maleic type polyesters, vinyl esters, epoxies, phenolics, cyanates, bismaleimides, and nadic end-capped polyimides.

121. (Original) The composite material of claim 118, wherein said polymer comprises a thermoplastic polymer.

122. (Previously presented) The composite material of claim 121, wherein said thermoplastic polymer comprises a polymeric material selected from the group consisting of polysulfones, polyamides, polycarbonates, polyphenylene oxides, polysulfides, polyether ether ketone, polyether sulfones, polyamide-imides, polyetherimides, polyimides, polyarylates, and liquid crystalline polyesters.

123-126. (Cancelled)

127. (Currently amended) The composite material of claim 117, wherein said single-wall carbon nanotube material comprises ropes of up to about 10^3 single-wall carbon nanotubes.
128. (Currently amended) The composite material of claim 117, wherein said single-wall carbon nanotube material comprises fibers of greater than 10^6 single-wall carbon nanotubes.
129. (Currently amended) The composite material of claim ~~117~~ 126 further comprising an additional fibrous material.
130. (Currently amended) The composite material of claim ~~117~~ 126 wherein said single-wall carbon nanotube material is ~~modified~~ derivatized to chemically react ~~interact~~ with said matrix material.
131. (Currently amended) A method for producing a composite material ~~containing~~ comprising a single-wall carbon nanotube material comprising:
- (a) preparing a matrix material precursor;
 - (b) combining a said single-wall carbon nanotube material with said matrix material precursor; and
 - (c) forming said composite material.
- 132-134. (Cancelled)
135. (Currently amended) The method of claim 131, wherein said matrix material precursor is a fluid and wherein ~~caused to flow around a pre-formed arrangement of~~ said single-wall carbon nanotube material is in a pre-formed arrangement.
136. (Currently amended) A method of producing a composite material ~~containing~~ comprising carbon nanotube material comprising:
- (a) preparing an assembly of a fibrous material;

- (b) adding said carbon nanotube material to said fibrous material; and
 - (c) adding a matrix material precursor to said carbon nanotube material and said fibrous material.
137. (Original) The method of claim 136, wherein said fibrous materials are arranged in a two-dimensional sheet, and some portion of the said carbon nanotube material is oriented in a direction other than parallel to said sheet.
138. (Cancelled)
139. (Currently amended) The method of claim 131 wherein said single-wall carbon nanotube material comprises ropes of up to about 10^3 single-wall carbon nanotubes.
140. (Currently amended) The method of claim 131 wherein said single-wall carbon nanotube material comprises fibers of greater than 10^6 single-wall carbon nanotubes.
- 141-162. (Cancelled)
163. (Previously presented) The composite material of claim 127 further comprising an additional fibrous material.
164. (Previously presented) The composite material of claim 128 further comprising an additional fibrous material.
165. (Currently amended) The composite material of claim 127 wherein said single-wall carbon nanotube material is ~~modified~~ derivatized to chemically react—~~interact~~—with said matrix material.
166. (Currently amended) The composite material of claim 128 wherein said single-wall carbon nanotube material is ~~modified~~ derivatized to chemically react ~~interact~~ with said matrix material.
167. (Cancelled)

168. (Previously presented) The method of claim 136 wherein said carbon nanotube material comprises ropes of up to about 10^3 single-wall carbon nanotubes.
169. (Previously presented) The method of claim 136 wherein said carbon nanotube material comprises fibers of greater than 10^6 single-wall carbon nanotubes.
170. (Currently amended) The composite material of claim 117 ~~comprising a mixture of~~ wherein the single-wall carbon nanotube material comprises single-wall carbon nanotubes having lengths in the range between 5 and 500 nm.
171. (Previously presented) A composite material comprising carbon nanotubes, a fibrous structural constituent and a matrix material.
172. (Currently amended) The composite material of claim 171 wherein the fibrous structural constituent comprises a material selected from the group consisting of cellulose, ~~carbon~~, glass, graphite, silicon oxide, carbon steel, aluminum oxide, beryllium, beryllium oxide, boron, boron carbide, boron nitride, chromium, copper, iron, nickel, silicon carbide, silicon nitride, alumina yarn, alumina-boria-silica, zirconia-silica, zircona, alumina, quartz, molybdenum, stainless steel, titanium boride, tungsten, zirconium oxide and combinations thereof.
173. (Previously presented) The composite material of claim 171 wherein the matrix comprises a polymer.
174. (Previously presented) The composite material of claim 173 wherein the polymer comprises a thermosetting polymer.
175. (Previously presented) The composite material of claim 174 wherein the thermosetting polymer comprises a polymeric material selected from the group consisting of phthalic/maleic type polyesters, vinyl esters, epoxies, phenolics, cyanates, bismaleimides and nadic end-capped polyimides.

176. (Previously presented) The composite material of claim 173 wherein the polymer comprises a thermoplastic polymer.
177. (Previously presented) The composite material of claim 176 wherein the thermoplastic polymer comprises a polymeric material selected from the group consisting of polysulfones, polyamides, polycarbonates, polyphenylene oxides, polysulfides, polyether ether ketones, polyether sulfones, polyamide-imides, polyetherimides, polyimides, polyarylates, liquid crystalline polyesters and combinations thereof.
- 178-183. (Cancelled)
184. (Previously presented) The composite material of claim 171 wherein the carbon nanotubes comprise single-wall carbon nanotubes that have been subjected to a purification process.
185. (Currently amended) The composite material of claim ~~117~~ 171 wherein the carbon nanotubes comprise single-wall carbon nanotubes that have a homogeneous characteristic selected from the group consisting of lengths, diameters, helicities or combinations thereof.
186. (Currently amended) The composite material of claim ~~117~~ 171 ~~comprising wherein the carbon nanotubes comprise single-wall~~ carbon nanotube ropes, wherein each of the single-wall carbon nanotube ropes comprise at most 10^3 individual single-wall carbon nanotubes.
187. (Currently amended) The composite material of claim ~~117~~ 171 ~~comprising wherein the carbon nanotubes comprise single-wall~~ carbon nanotube fibers, wherein each of the single-wall carbon nanotube fibers comprise at least 10^6 individual single-wall carbon nanotubes.
188. (Currently amended) The composite material of claim ~~117~~ 171 wherein the carbon nanotubes comprise single-wall carbon nanotubes ~~are~~ in a form selected from the group

consisting of felts, bucky papers, cut lengths of single-wall carbon nanotube ropes, cut lengths of single-wall carbon nanotube fibers and combinations thereof.

189. (Currently amended) The composite material of claim ~~447~~ 171 wherein the composite material further comprises:
- (a) a first area wherein a first portion of single-wall carbon nanotubes have ~~having~~ a first homogeneous characteristic selected from the group consisting of lengths, diameters, helicities and combinations thereof;
 - (b) a second area wherein a second portion of single-wall carbon nanotubes have ~~having~~ a second homogeneous characteristic selected from the group consisting of lengths, diameters, helicities and combinations thereof; and
 - (c) wherein the first homogeneous characteristic is different from the second homogeneous characteristic.
190. (Currently amended) The composite material of claim ~~447~~ 171 wherein the ~~single-wall~~ carbon nanotubes comprise chemically-derivatized single-wall carbon nanotubes, chemically-derivatized ropes of single-wall carbon nanotubes, chemically-derivatized fibers and combinations thereof.
191. (Previously presented) The composite material of claim 190 wherein the chemically-derivatized single-wall carbon nanotubes have side-wall defects.
192. (Previously presented) The composite material of claim 190 wherein the chemically-derivatized single-wall carbon nanotubes have side-wall bonding sites.
193. (Currently amended) The composite material of claim ~~447~~ 171 further comprising single-wall carbon nanotubes having side-wall modifications capable of an interaction with the matrix material, wherein the interaction is selected from the group consisting of physical, chemical and combinations thereof.

194. (Currently amended) The composite material of claim 191 wherein at least one of the side-wall defects ~~comprise an impurity~~ comprises replacement of at least one carbon atom in the single-wall carbon nanotube lattice with at least one non-carbon atom.
195. (Currently amended) The composite material of claim 194 wherein the non-carbon atom ~~is impurity comprises a substance~~ selected from the group consisting of boron, ~~boron nitride~~ nitrogen, and combinations thereof.
196. (Currently amended) A laminate comprising fibrous material impregnated with a mixture comprising a polymer matrix material, ~~wherein the matrix material comprises~~ and single-wall carbon nanotubes.
197. (Previously presented) The laminate of claim 196 wherein the fibrous material comprises graphite fiber.
198. (Previously presented) The laminate of claim 196 wherein the matrix material comprises an epoxy.
199. (Currently amended) The laminate of claim 196 wherein the fibrous ~~materials are~~ material is arranged in layers.
200. (Previously presented) A composite comprising single-wall carbon nanotubes having loops interpenetrated by a matrix material.
201. (Currently amended) A composite comprising derivatized single-wall carbon nanotubes and a polymer, wherein the polymer has at least one pendant group capable of a chemical reaction ~~an interaction~~ with the derivatized single-wall carbon nanotubes.
202. (Currently amended) The composite of claim 201 wherein the ~~interaction~~ chemical reaction is promoted by photolysis.
203. (Currently amended) A method for producing a composite material comprising:
- (a) introducing a matrix material;

- (b) combining a carbon nanotube material ~~comprising a plurality of single-wall carbon nanotubes~~ with the matrix material, wherein the carbon nanotube material comprises a plurality of single-wall carbon nanotubes and wherein the single-wall carbon nanotubes are derivatized to facilitate bonding to other single-wall carbon nanotubes, the matrix material or both; and
 - (c) subsequently forming the composite material.
204. (Currently amended) A method for producing a composite material comprising:
- (a) introducing a matrix material precursor;
 - (b) combining a carbon nanotube material ~~comprising a plurality of single-wall carbon nanotubes~~ with the matrix material precursor, wherein the carbon nanotube material comprises a plurality of single-wall carbon nanotubes and wherein the single-wall carbon nanotubes are derivatized to facilitate bonding to other single-wall carbon nanotubes, the matrix material precursor or both; and
 - (c) subsequently forming the composite material.
205. (Previously presented) The method of claim 203 wherein the carbon nanotube material is dispersed in a liquid carrier.
206. (Previously presented) The method of claim 205 wherein the liquid carrier comprises a liquid selected from the group consisting of water and an organic solvent.
207. (Currently amended) The method of claim 204 wherein the ~~further comprising converting~~ the matrix material precursor is converted into ~~form~~ the matrix material during the forming of the composite material.
208. (Cancelled)
209. (Currently amended) The method of claim ~~208~~204 wherein the plurality of single-wall carbon nanotubes ~~nanotube material~~ is aligned by an electric field before the ~~converting~~ forming step.

210. (Currently amended) The method of claim ~~207~~ 204 wherein the matrix material precursor is converted by ~~converting step~~ comprises polymerization into of the matrix material.
211. (Currently amended) The method of claim ~~207~~ 204 further comprising pre-forming the plurality of single-wall carbon nanotubes into a structure before the combining step.
212. (Previously presented) The method of claim 203 further comprising combining a fibrous material with the carbon nanotube material and the matrix material.
213. (Currently amended) A method of producing a composite material, comprising:
- (a) dispersing carbon nanotube material in a matrix material precursor to form a carbon nanotube-matrix material precursor dispersion;
 - (b) impregnating a fiber material with the carbon nanotube-matrix material precursor; and
 - (c) forming a laminated composite material comprising the fiber material, ~~the~~ a matrix material, wherein the matrix material is formed from the matrix material precursor, and carbon nanotubes.
214. (New) The method of claim 135 wherein the pre-formed arrangement is selected from the group consisting of a bucky paper and a felt.